THE 28th INTERNATIONAL SYMPOSIUM ON SEMICONDUCTOR MANUFACTURING

December 15-16, 2020 (Live Dates)

Until January 15, 2021 (On-demand)

ISSM 2020 has move to Virtual Platform

CALL FOR PAPERS

<Re-EXTENDED> ABSTRACT DEADLINE: 24:00, Wednesday, September 23, 2020 <UCT +9>

Since its start in 1992 in Japan, ISSM has been providing unique opportunities to share semiconductor manufacturing technology "best practices" for the benefit of professionals worldwide. The symposium had been held in Japan and U.S. alternately until 2010, then, with partnership of TSIA and e-Manufacturing & Design Collaboration Symposium (eMDC), ISSM has been placed in Japan and Taiwan since 2011 up to now.

The symposium has been contributing to the semiconductor value chain by inspiring breakthrough trends of semiconductor manufacturing technologies through proactive discussion among professionals gathered from all over the world. The global semiconductor industry is facing with a giant wave of consolidation from management views. The advance technology development based on Moore's Law has been diversified responding to the birth of emerging quick-to-market applications. The semiconductor devices are evolving to keep pace with system requirements such as 5G, automatic driving, medical appliances, IoT, big data, AI, "smart" infrastructure.

This trend changes drastically the ways semiconductor devices are designed, manufactured, packaged, measured, and tested.

The semiconductor industry is expected to provide the solutions to meet the demands from new requirements such as 3-dimensions architecture, IoT devices, new device physical structure, emerging materials, and evolutional packaging architectures and to ensure higher reliabilities. For legacy fab such as 6 and 8 inch wafer production lines, it is expected to install with new concept manufacturing.

ISSM continues to contribute to the growth of the semiconductor industry through its infrastructure for networking, discussion, and information sharing among the world's professionals.

This year, ISSM has announced that its2020 symposium will be taking place virtually because of this COVID-19 Global Pandemic.

We invite you to share your professional experiences at the 28th annual International Symposium on Semiconductor Manufacturing.

Areas of Interest

Abstract will be accepted for each of following areas of interest.

Fab Management

* Factory Design (FD)
* Material Handling Management (MH)
* Manufacturing Strategy (MS)
* Fab Operation Method (FO)
* Environment, Safety and Health (ES)
* Worker and WIP Control (WC)
* Intelligent Data Management (ID)

Material Technology

* New Gas, New Liquid, and New Resist Technologies (NM)
* Material Informatics (MI)
* New Parts Technology for Process Equipment (NP)

Process Integration

* Process/Material Optimization (PO)
* Process Monitoring & Control Method (PM)
* Yield & Defect Control (YD)
* Ultraclean Technology (UT)
* New Process/Metrology Equipment (PE)
* Manufacturing Technology for Variety Devices (VD)

Final Manufacturing

* Final Manufacturing & Integrated Package (FM)

ISSM Best Papers for IEEE/TSM

Best papers for ISSM will have the chance to submit full papers for IEEE/TSM (Transactions on Semiconductor Manufacturing) which is published quarterly for worldwide distribution. About ten papers are annually selected and reported in ISSM/TSM special session.

ISSM Awards

The following ISSM Awards to be presented to the excellent papers:

- ISSM 2020 Best Paper Awards
- ISSM 2020 Best of the Best Paper Award
- ISSM 2020 Student Paper Awards

Highlighted Theme

Papers on the topics of special interests may be programmed as a special session for highlight themes. Papers on the following topics are especially welcome. See more information on the reverse side.

IoT and AI Solution

-Big Data Science in Fab
-IoT and Sensing Technology
-AI Application

Production Innovation in 200-mm Fab

- Optimization of Legacy Fab
- Fab Management and Utilization of 200mm Fab
- Utilization for Power Devices (IGBT, SiC) Manufacturing

High Reliability Device Process Technology for Automotive and Medical Applications

- Technology for an Effective Screening
- Technology for an Outlier Screening
- Rapid Failure Analysis for an Incident

Game-Changing Manufacturing Technologies with Heterogeneous Integration Led by 5G and IoT

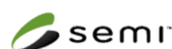
-Technology for Wafer on Wafer, Chip on Wafer, FOWLP (Fan Out Wafer Level Package), FOPLP (Panel Level Package)
- Camera (Optical) Modules
- MEMS/Sensors
- RF Module/Antenna/Magnetic Shield
- Thermal Management
-New materials for Heat Dissipation
-Manufacturing Cost

Abstract Submission Due:	Wed., Sep 23, 2020
Notification of Paper Acceptance:	Mon., Oct. 12, 2020

e-Manufacturing & Design Collaboration

ISSM 2020 addresses the approach from design perspective to manufacturing through our collaboration with eMDC.

ISSM Sponsors:



http://www.semiconportal.com/issm/ for most current information.

Contact issm_2020@semiconportal.com for further inquiries.

◆Details for the Areas of Interest◆

Fab Management

FD: Factory Design
This area focuses on fab design and its key enablers to meet the flexibility, extendibility, and scalability needs of a cost-effective leading-edge fab.
MH: Material Handling Management
This area focuses on challenges and measures for transport system control of equipment, materials, and products.
MS: Manufacturing Strategy
This area focuses on strategy and concepts for more functional fab, and its operation management to meet rapidly changing complex business requirements.
FO: Fab Operation Method
This area focuses on optimization of operating methods such as lot-base progress management, dispatching, and cycle time management for the entire fab.
ES: Environment, Safety and Health
This area focuses on suppression of energy and materials consumption, recycling and reuse of materials from the standpoint of the environmental management in a semiconductor factory.
WC: Worker and Wafer-in-Process (WIP) Control
This area focuses on WIP control system and operator allocation management in wafer processing for cost reduction.
ID: Intelligent Data Management
This area focuses on analysis methods and systems for big data collected in the fab.

Material Technology

NM: New Gas, New Liquid, and New Resist Technologies
This area focuses on new process gases, chemicals, and EUV resist technology.
MI: Material Informatics (MI)
This area focuses on gas process design technologies using AI and machine learning.
NP: New Parts Technology for Process Equipment
This area focuses on new parts technologies for process equipment such as wafer fixing parts.

Process Integration

PO: Process Optimization
This area focuses on process and material optimization from the standpoint of high reliability, cost reduction and environment. The breakthrough technology to improve the productivity of legacy process is contained.
PM: Process Monitoring & Control Method
This area focuses on advanced process control (APC) technology such as visualization of sensor data of manufacturing equipment and virtual metrology.
YD: Yield & Defect Control
This area focuses on probe yield enhancement and its stabilization technology including inspection, analysis and reduction of defects and particles.
UT: Ultraclean Technology
This area focuses on contamination control of wafer backside and bevel, surface cleaning. Energy saving cleaning and molecular level contamination control in advanced wafer fab will be included.
PE: New Process/Metrology Equipment
This area focuses on finer pattern delineation/control. The application of equipment control and engineering system will be highlighted.
VD: Manufacturing Technology for Variety Devices
This area focuses on manufacturing technologies specialized for emerging variety devices in MEMS, power devices, and CMOS sensors areas which can be realized by technologies not limited to miniaturization or large-diameter wafers.

Final Manufacturing

FM: Final Manufacturing & Integrated Package
This area focuses on technologies for Wafer on Wafer, 3D or 2.5D Chip on Wafer, FOWLP (Fan Out Wafer Level Package), FOPLP (Panel Level Package) ,Camera (Optical) modules, MEMS/sensors, thermal and magnetic management.

◆Details for the Highlight Theme◆

IoT and AI Solution

In recent years, the data utilization has become common sense in many manufacturing industries. The IoT for data collection and AI applications using the collected data have received great attention. For more than 30 years in semiconductor manufacturing, research and development and commercialization of various manufacturing technologies utilizing data have been well performed. AI tools and application case studies were introduced at the ISSM Strategy Forum in 2019, under the theme of "Smart Factory with AI! From Machine Learning with Open Source to Applying AI to Semiconductor Manufacturing". Papers related the application of IoT and AI to create breakthrough manufacturing technologies are welcomed. The scope covers the utilization of semiconductor manufacturing to other manufacturing industries.

Topics may include (but not limited to): Big Data Science in Fab, IoT and Sensing Technology, AI Application, Bayesian Design, Machine Learning, Deep Learning, Material Informatics, AI Tools

Production Innovation in 200-mm Fab

To strengthen device competitiveness specially for emerging IoT devices, it is essential to pursue economics in 200 mm fab and to boost productivity. The strategies and issues of capital equipment for efficient fab will be discussed.

Topics may include (but not limited to): Optimization of Legacy Fab, Fab Management and Utilization of 200mm Fab, Utilization for Power Devices (IGBT, SiC) Manufacturing

High Reliability Device Process Technology for Automotive and Medical Applications

Semiconductor industry considers automotive and medical devices as growing markets. These markets require superior reliability, which makes improving device reliability essential.
Semiconductor manufacturing technology for highly reliable devices shall be the key to revive semiconductor industry.

Topics may include (but not limited to): Technology for an Effective Screening, Technology for an Outlier Screening, Rapid Failure Analysis for an Incident

Game-Changing Manufacturing Technologies with Heterogeneous Integration Led by 5G and IoT

5G-related devices and IoT require high-performance semiconductors and large volumes of sensors. There is a need for innovation in heterogeneous integration and sensor modules that incorporate multiple advanced semiconductor devices. The manufacturing technologies including thermal and electromagnetic control will be discussed.

Topics may include (but not limited to): Technology for Wafer on Wafer, Chip on Wafer, FOWLP (Fan Out Wafer Level Package), FOPLP (Panel Level Package), Camera (Optical) Modules, MEMS/Sensors, RF Module/Antenna/Magnetic Shield, Thermal Management, New materials for Heat Dissipation, EMC, EMS

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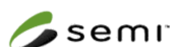

http://www.semiconportal.com/issm/ for most current information.
Contact issm_2020@semiconportal.com for further inquiries.